

Claim Amendments

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Claims 1 – 56 (canceled)

Claims 57 – 74 (canceled)

Claim 75 (currently amended)      A mold-forming composition for use in producing an investment casting shell, the mold-forming composition comprising:

a colloidal silica providing 20.3% to 37.5% of the mold-forming composition's weight;

a zircon flour providing 15.2% to 35.6% of the mold-forming composition's weight, wherein most of the zircon flour has a zircon particle size of 200 mesh to 350 mesh;

a fused silica providing 12.9% to 21.3% of the mold-forming composition's weight, wherein most of the fused silica has a silica particle size of 90 mesh to 150 mesh;

an alumina providing 6.4% to 27.8% of the mold-forming ~~composition's~~ composition's weight, wherein most of the alumina has an alumina particle size of 50 mesh to 325 mesh; and

a thickness-promoting material providing 0.7% to 2% of the mold-forming composition's weight, wherein the following is true:

- a) the fused silica plus the alumina combined provide 21.2% to 40.7% of the mold-forming composition's weight,
- b) the fused silica plus the zircon flour combined provide 28.1% to 56.8% of the mold-forming composition's weight, and
- c) the zircon flour plus the alumina combined provide 35.6% to 47.2% of the mold-forming composition's weight.

Claim 76 (currently amended) A mold-forming composition for use in producing an investment casting shell, the mold-forming composition comprising:

a colloidal silica providing 20.3% to 37.5% of the mold-forming composition's weight;

a zircon flour providing 15.2% to 35.6% of the mold-forming composition's weight, wherein most of the zircon flour has a zircon particle size of 200 mesh to 350 mesh;

a fused silica providing 12.9% to 21.3% of the mold-forming composition's weight, wherein most of the fused silica has a silica particle size of 90 mesh to 150 mesh;

an alumina providing 6.4% to 27.8% of the mold-forming ~~compositen's~~ composition's weight, wherein an appreciable amount of the alumina has an alumina particle size of substantially 200 mesh; and

a thickness-promoting material comprising a mixture of corn starch and ~~welan~~ gum a polysaccharide binder, wherein the thickness-promoting material provides 0.7% to 2% of the mold-forming composition's weight, wherein the following is true:

- a) the fused silica plus the alumina combined provide 21.2% to 40.7% of the mold-forming composition's weight,
- b) the fused silica plus the zircon flour combined provide 28.1% to 56.8% of the mold-forming composition's weight, and
- c) the zircon flour plus the alumina combined provide 35.6% to 47.2% of the mold-forming composition's weight.

Claim 77 (currently amended) A mold-forming composition for use in producing an investment casting shell, the mold-forming composition comprising:

a colloidal silica providing 20.3% to 37.5% of the mold-forming composition's weight;

a zircon flour providing 15.2% to 35.6% of the mold-forming composition's weight, wherein most of the zircon flour has a zircon particle size of substantially 325 mesh;

a fused silica providing 12.9% to 21.3% of the mold-forming composition's weight, wherein most of the fused silica has a silica particle size of substantially 120 mesh;

an alumina providing 6.4% to 27.8% of the mold-forming ~~composition's~~ composition's weight, wherein an appreciable amount of the alumina has an alumina particle size of substantially 200 mesh; and

a thickness-promoting material comprising a mixture of corn starch and ~~welan~~ gum a polysaccharide binder, wherein the thickness-promoting material provides 0.7% to 2% of the mold-forming composition's weight, wherein the following is true:

- a) the fused silica plus the alumina combined provide 21.2% to 40.7% of the mold-forming composition's weight,
- b) the fused silica plus the zircon flour combined provide 28.1% to 56.8% of the mold-forming composition's weight,
- c) the zircon flour plus the alumina combined provide 35.6% to 47.2% of the mold-forming composition's weight, and
- d) the mold-forming composition has a viscosity greater than 10,000 cps.